REMARKS

Applicants cancel 1-2, 4, 6, 8-9, and 11-12 without prejudice. Claims 3, 5, 7, and 10

have previously been canceled. Applicants submit pending claims 13-21 to more clearly

recite the features of the claimed invention. No new matter has been added.

Claims 1-2, 4, 6, 8-9, and 11-12 were rejected under 35 U.S.C. § 103(a) as being

unpatentable over United States Patent Application Publication No. 2002/0120769 to

Ammitzboell in view of "RFC 3376." Applicants cancel the rejected claims without

prejudice, and submit claims 13-21 to more clearly recite the features of the claimed

invention.

The Examiner cited Ammitzboell as a principal reference that allegedly discloses the

main features recited in claim 9, corresponding features of which are now incorporated in

claim 13.

Ammitzboell only describes, however,

> "A layer 2 device 220, such as a switch, controls to
> which ports (numbered 1 through 24) IP multicast traffic is
> forwarded by snooping the IGMP query, report and leave
> messages. The query message is used to start an internal timer
> and the IGMP report and leave message is used to maintain the
> IGMP pruning table (in which is stored information about
> which host(s) is/are joined on which port(s))." Paragraph
> [0039] of Ammitzboell; (emphasis added)

> "An IGMP pruning table 352 stores information about
> which ports on VLAN A have receivers joined. The IGMP
> pruning table 252 is stored on the layer 2 device 320. The
> layer 2 device 320 includes an IGMP pruning algorithm
> together with an IGMP querier algorithm 350.
> To ensure that the layer 2 switch is able to operate also
> in a network in which IP multicast routers are present, it is
> necessary that the IGMP querier algorithm embedded in the
> layer 2 switch follows the suggested specification for IGMP.
> The IGMP querier algorithm is an election scheme which
> ensures that there is always one device per VLAN that is
> transmitting IGMP general queries with a fixed time interval
> between. IGMP pruning will not work in a VLAN unless there

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is an active querier. FIG. 4 shows an example of a state transition diagram for a router." Paragraphs [0047]-[0048] of <u>Ammitzboell</u>. (Emphasis added)

In other words, <u>Ammitzboell</u> only describes a layer 2 device with an IGMP pruning function disposed at VLANs A, B, and C. Thus, <u>Ammitzboell</u>, as cited and relied upon by the Examiner, at least fails to disclose or even suggest the claimed features of:

> "...Layer-2 switch <u>interposed between two Layer-3 switches</u>...
> wherein <u>each of said Layer-3 switches</u> relays said multicast packets transmitted from said multicast transmitting terminal (source) through the Layer-2 switch and distributes them to said multicast receiving terminals requesting distribution of said multicast packets and transmits said discrimination packet, where <u>each of the Layer-3 switches</u> comprises a decision function unit for deciding if a received packet is the discrimination packet or a general packet other than the discrimination packet and a header processing function unit for processing the MAC header of said received packet and performing different processing in accordance with results of decision of said decision function unit."

The Examiner relied upon <u>RFC 3376</u> as a combining reference to specifically address "IP header," "MAC header," "IP address," "MAC address"—or, "message format"—features recited in the claims. And a combination with this reference would, thus, still have failed to cure the above-described deficiencies of <u>Ammitzboell</u>, even assuming, <u>arguendo</u>, that such a combination would have been obvious to one skilled in the art at the time the claimed invention was made.

Therefore, even assuming, <u>arguendo</u>, that it would have been obvious to one skilled in the art at the time the claimed invention was made to combine <u>Ammitzboell</u> and <u>RFC 3376</u>, such a combination would still have failed to disclose or suggest,

> "[a] communication method in a multicast communication network, including <u>at least one Layer-2 switch interposed between two Layer-3 switches</u>, for distributing multicast packets from a multicast transmitting terminal

(source) through the at least one Layer-2 switch to a plurality
of multicast receiving terminals (receivers), comprising:

forming a receiving terminal discrimination mechanism
for discriminating multicast receiving terminals for receiving
distribution of said multicast packets by using a discrimination
packet, to be transmitted from said multicast receiving terminal
to said multicast transmitting terminal when sending an IGMP-
JOIN packet, for teaching said Layer-2 switch of an existence
of the multicast receiving terminal requesting distribution of
said multicast packets under the Layer-2 switch, the
discrimination packet including an IP header and MAC header
and wherein an IP source address and MAC source address are
an IP address and MAC address of a multicast group to which
said multicast receiving terminal belongs; and

distributing multicast packets selectively by said
receiving terminal discrimination mechanism only to multicast
receiving terminals requesting distribution of said multicast
packets when there are multicast receiving terminals relating to
such requests under said Layer-2 switches,

wherein each of said Layer-3 switches relays said
multicast packets transmitted from said multicast transmitting
terminal (source) through the Layer-2 switch and distributes
them to said multicast receiving terminals requesting
distribution of said multicast packets and transmits said
discrimination packet, where each of the Layer-3 switches
comprises a decision function unit for deciding if a received
packet is the discrimination packet or a general packet other
than the discrimination packet and a header processing function
unit for processing the MAC header of said received packet
and performing different processing in accordance with results
of decision of said decision function unit," as recited in claim
13. (Emphasis added)

Figs. 13(a) and 13(b), and their corresponding description in the specification, provide

exemplary embodiments of the claimed invention, illustrating the advantages of the above-

highlighted layer-3 switch claim features. The cited references clearly fail to disclose or

suggest the layer-2/layer-3 switch structure and the claimed layer-3 switch features.

Accordingly, Applicants respectfully submit that claim 13, together with claims 14-15

dependent therefrom, is patentable over Ammitzboell and RFC 3376, separately and in

combination, for at least the foregoing reasons. Claims 16 and 20 incorporate features that

correspond to those of claim 13 discussed above, and are, therefore, together with claims 17-

19 and 21 dependent therefrom, respectively, patentable over <u>Ammitzboell</u> and <u>RFC 3376</u> for

at least the same reasons.

In view of the remarks set forth above, this application is in condition for allowance

which action is respectfully requested. However, if for any reason the Examiner should

consider this application not to be in condition for allowance, the Examiner is respectfully

requested to telephone the undersigned attorney at the number listed below prior to issuing a

further Action.

Any fee due with this paper may be charged to Deposit Account No. 50-1290.

Respectfully submitted,

_____/Dexter T. Chang/_____
Dexter T. Chang
Reg. No. 44,071

CUSTOMER NUMBER 026304
Telephone: (212) 940-6384
Fax: (212) 940-8986 or 8987
Docket No.: FUJA 21.051 (100794-00577)
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